



User's Guide
SBTF10xx-12x
Stand-Alone Media Converter

- **Copper to Fiber**
- **10/100 Bridging 6-Port**
- **(5 copper / 1 fiber)**
- **10/100Base-TX to 100Base-FX**

The SBTF10xx-12x 6-port Ethernet/fast Ethernet bridging media converter allows connection of 10Base-T Ethernet and/or 100Base-TX fast Ethernet twisted-pair copper network devices to network devices on a 100Base-FX fast Ethernet fiber network.

Part Number	Copper - five (5) ports 10Base-T/100Base-TX	Duplex Fiber-Optic - one (1) port 100Base-FX
SBTF1011-120	RJ-45 100 m (328 ft)*	ST, 1300 nm multimode 2 km (1.2 miles)*
SBTF1013-120	RJ-45 100 m (328 ft)*	SC, 1300 nm multimode 2 km (1.2 miles)*
SBTF1014-120	RJ-45 100 m (328 ft)*	SC, 1310 nm single mode 20 km (12.4 miles)*
SBTF1015-120 (long haul)	RJ-45 100 m (328 ft)*	SC, 1310 nm single mode 40 km (24.8 miles)*
SBTF1016-120 (extra long haul)	RJ-45 100 m (328 ft)*	SC, 1310 nm single mode 60 km (37.2 miles)*
SBTF1017-120 (long wave length)	RJ-45 100 m (328 ft)*	SC, 1550 nm single mode 80 km (49.7 miles)*
SBTF1018-120	RJ-45 100 m (328 ft)*	MT-RJ, 1300 nm multimode 2 km (1.2 miles)*
SBTF1025-120	RJ-45 100 m (328 ft)*	MT-RJ, 1310 nm single mode 5 km (3.1 miles)*

* Typical maximum cable distance.
Actual distance is dependent upon the physical characteristics of the network.

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SBFTF10xx-12x

Part Number	Copper - five (5) ports 10Base-T/100Base-TX	Fiber-Optic - one (1) port Single Fiber
SBFTF1029-120	RJ-45 100 m (328 ft)*	SC, 1310 nm (TX)/1550 nm (RX) single mode, 20 km (12.4 miles)
SBFTF1029-121	RJ-45 100 m (328 ft)*	SC, 1550 nm (TX)/1310 nm (RX) single mode, 20 km (12.4 miles)*
SBFTF1029-122	RJ-45 100 m (328 ft)*	SC, 1310 nm (TX)/1550 nm (RX) single mode, 40 km (24.8 miles)*
SBFTF1029-123	RJ-45 100 m (328 ft)*	SC, 1550 nm (TX)/1310 nm (RX) single mode, 40 km (24.8 miles)*

* Typical maximum cable distance. Actual distance is dependent upon the physical characteristics of the network. (TX) = transmit (RX) = receive

** SBFTF1029-120 and -121 are intended to be installed in the same network where one is the local converter and the other is the remote converter.

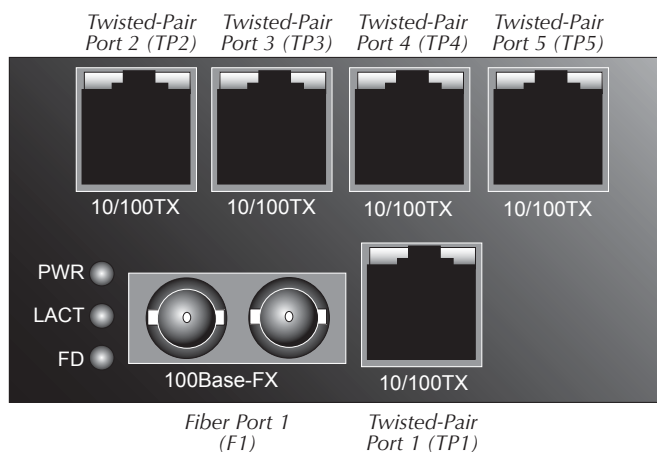
*** SBFTF1029-122 and -123 are intended to be installed in the same network where one is the local converter and the other is the remote converter.

The **chassis version** of the media converter is CBFTF10xx-12x. For more information, see the CBFTF10xx-12x user's guide on-line at: www.transition.com.

Installation

Copper and Fiber Ports

The figure below illustrates the locations of the five (5) twisted-pair copper ports and the one (1) fiber port.



Installation -- Continued

Set the Dip Switches

The dip switches are located on the side of the media converter. Use a small, flat-blade screwdriver or a similar device to set each dip switch.

"SW1" switches 1 - 6

Dip switches 1, 2, and 3 apply only to twisted-pair copper port 1 (TP1).

Dip switch 4 applies to fiber port 1 (F1).

Dip switch 5 applies to all twisted-pair copper ports (TP1, TP2, TP3, TP4, TP5).

Dip switch 6 is not in use.

"Config. Switches" 1 - 4

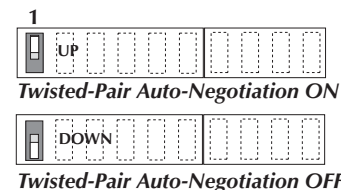
Dip switches 1, 2, 3, and 4 apply **only** to twisted-pair copper port 2 (TP2).

NOTE: Switches 1, 2, and 3 apply **only** to twisted-pair **copper port 1 (TP1)**.

1. Twisted-Pair Auto-Negotiation

Up (Enabled) - The media converter "advertises" ALL rate and mode capabilities to the network:

- 100Mb/s full-duplex • 100Mb/s half-duplex,
- 10Mb/s full-duplex • 10Mb/s half-duplex.

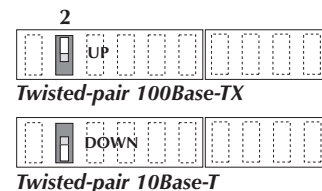


Down (Disabled) - The bridging media converter does not "advertise" the rate and mode capabilities to the network. **Switches 2 and 3** are then used to set the twisted-pair rate and mode.

2. Twisted-Pair Rate

Up (100Base-TX) - Sets the twisted-pair rate to 100Base-TX.

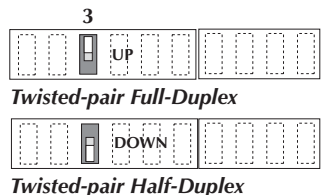
Down (10Base-T) - Sets the twisted-pair rate to 10Base-T.



3. Twisted-Pair Mode

Up (Full-Duplex) - The twisted-pair cable distances are constrained by the cable requirements (see pages 1 and 2).

Down (Half-Duplex): - The twisted-pair cable distances are constrained by the 512-Bit Rule (see page 9).



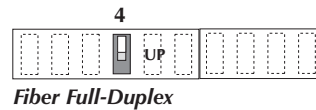
Installation -- Continued

Set the Dip Switches -- Continued

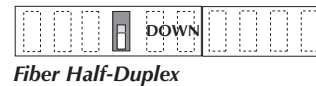
NOTE: Dip switch 4 (in the "SW" set) applies to fiber port 1 (F1).

4. Fiber Mode (Fiber Port 1)

Up (Full-Duplex) - The cable distances for fiber port 1 (F1) are constrained by the cable requirements (see pages 1 and 2).



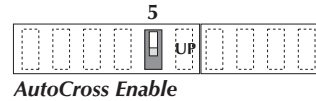
Down (Half-Duplex) - The cable distances for fiber port 1 (F1) are constrained by the 512-Bit Rule (see page 9).



NOTE: DIP switch 5 (in the "SW" set) applies to ALL twisted-pair copper ports (TP1, TP2, TP3, TP4, TP5).

5. AutoCross

Up (Enable) - The media converter connects automatically to either straight-through or crossover twisted-pair copper cable.



Down (Disable) - Either straight-through or crossover twisted-pair copper cable must be installed, according to the site requirements



6. Not in use

Installation -- Continued

Set the Dip Switches -- Continued

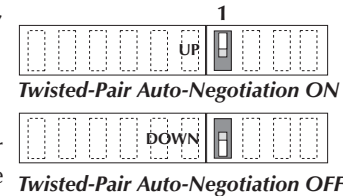
NOTE: Dip switches 1, 2, 3, and 4 (in the Config. Switches set) apply **ONLY** to twisted-pair copper port 2 (TP2).

1. Twisted-Pair Auto-Negotiation

Up (Enabled) - The media converter "advertises" ALL rate and mode capabilities to the network:

- 100Mb/s full-duplex
- 100Mb/s half-duplex,
- 10Mb/s full-duplex
- 10Mb/s half-duplex.

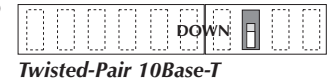
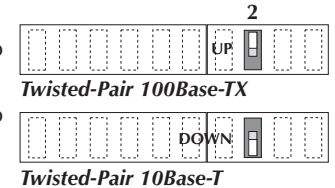
Down (Disabled) - The bridging media converter does not "advertise" the rate and mode capabilities to the network. **Switch 2** and **switch 3** are then used to set the twisted-pair rate and mode.



2. Twisted-Pair Rate

Up (100Base-TX) - Sets the twisted-pair rate to 100Base-TX.

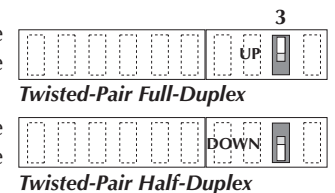
Down (10Base-T) - Sets the twisted-pair rate to 10Base-T.



3. Twisted-Pair Mode

Up (Full-Duplex) - The twisted-pair cable distances are constrained by the cable requirements (see pages 1 and 2).

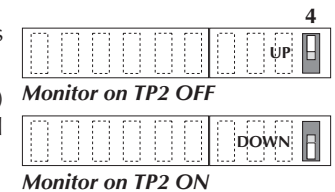
Down (Half-Duplex) - The twisted-pair cable distances are constrained by the 512-Bit Rule (see page 9).



4. Monitor for Twisted-Pair Port 2 (TP2)

Up (Off) - The twisted-pair port 2 (TP2) functions as directed by **switches 1, 2, and 3**.

Down (On) - The twisted-pair port 2 (TP2) functions as a "sniffer" port and transmits all packets received from ports F1 and TP1.

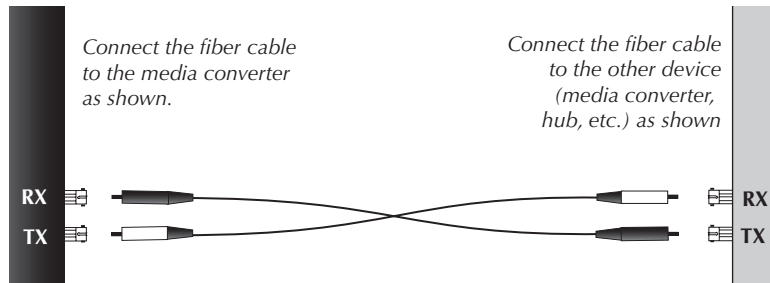


Installation -- Continued

- If **half-duplex** mode is used, refer to the 512-Bit Rule (see page 9).
- If **full-duplex** mode is used, the 512-Bit Rule does not apply. The cable lengths are constrained by the cable requirements (see pages 1 and 2).

Connect the Fiber Cable

1. Locate or build IEEE 803.2™ compliant 100Base-FX fiber cable with male, two-stranded TX to RX connectors installed at both ends.
2. Connect the fiber cables to the SBFTF10xx-12x media converter as described:
 - Connect the male **TX** cable connector to the female **TX** port.
 - Connect the male **RX** cable connector to the female **RX** port.
3. Connect the fiber cables to the other device (another media converter, hub, etc.) as described:
 - Connect the male **TX** cable connector to the female **RX** port.
 - Connect the male **RX** cable connector to the female **TX** port.



Installation -- Continued

Connect the Twisted-Pair Copper Cable

The AutoCross feature allows either MDI (straight-through) or MDI-X (crossover) cable connections to be configured automatically, according to the network conditions.

1. Locate or build IEEE 803.2™ compliant 10Base-T or 100Base-TX cables, with male, RJ-45 connectors installed at both ends.
2. Connect the RJ-45 connector at one end of the cable to the RJ-45 port on the SBFTF10xx-12x media converter.
3. Connect the RJ-45 connector at the other end of the cable to the RJ-45 port on the other device (switch, workstation, etc.).



Power the Media Converter

NOTE: The external power supply provided with this product is UL listed by the power supply's manufacturer.

AC

1. Connect the barrel connector on the power adapter to the media converter's power port (located on the back of the media converter).
2. Connect the power adapter plug to AC power.
3. Verify that the media converter is powered by observing the illuminated LED power indicator light.

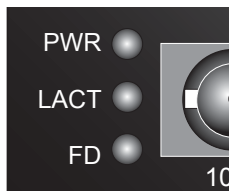
DC

Consult the user's guide for the Transition Networks SPS1872-xx DC external power supply for powering the media converter.

Operation

Status LEDs

Use the status LEDs next to the fiber ports to monitor the media converter and the **fiber network** connections.



The “FD” and “LACT” LEDs near the bottom of the media converter refer to **Fiber Port 1 (F1)**.

F(ull) D(uplex)

On = Full-duplex connection.

Off = Half-duplex connection.

L(ink) A(CT)I(IVITY)

On = Fiber link connection.

Flashing = Fiber network activity.

P(o)W(e)R

On = Connection to external AC or DC power.

Use the bi-color twisted-pair status LEDs to monitor the **twisted-pair copper network** connections.

Duplex/Link LED

Amber = A link on the half-duplex twisted-pair copper link.

Flashing Amber = Activity on the half-duplex copper link.

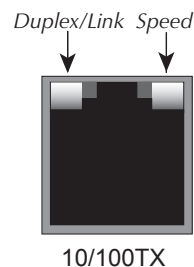
Green = A link on the full-duplex twisted-pair copper link.

Flashing Green = Activity on the full-duplex copper link.

Speed LED

Amber = 10Mb/s operation.

Green = 100Mb/s operation.



Operation -- Continued

Product Features

Full-Duplex Network

In a full-duplex network, maximum cable lengths are determined by **the type of cables** that are used. See pages 1 and 2 for the cable specifications for the different SBFTF10xx-12x models.

The 512-Bit Rule **does not apply** in a full-duplex network.

Half-Duplex Network (512-Bit Rule)

In a half-duplex network, the maximum cable lengths are determined by the round trip delay limitations of each fast Ethernet **collision domain**. (A collision domain is the longest path between any two terminal devices, e.g. a **terminal, switch, or router**.)

The 512-Bit Rule determines the maximum length of cable permitted by calculating the round-trip delay in **bit-times (BT)** of a particular collision domain. If the result is less than or equal to 512 BT, the path is good.

For more information on the 512-Bit Rule, see the white paper titled “Collision Domains” on the Transition Networks website at: www.transition.com.

Distance Extension

The SBFTF10xx-12x 6-point bridging media converter segments up to five (5) 10Base-T copper Ethernet and/or 100Base-TX copper fast Ethernet and one (1) 100Base-FX fiber fast Ethernet collision domains.

In a **half-duplex** Ethernet or fast Ethernet environment, the SBFTF10xx-12x media converter extends network distances by **segmenting collision domains** so that the 512-Bit Rule applies separately to each collision domain (see page 9).

In a **full-duplex** Ethernet or fast Ethernet environment, the SBFTF10xx-12x media converter extends network distances to the **physical cable limitations** imposed by the selected twisted-pair copper fiber cables (see pages 1 and 2).

Operation -- Continued

Product Features -- Continued

Rate Conversion

The SBFTF10xx-12x media converter allows connection of **10Mb/s** terminal devices on a 10Base-T legacy Ethernet copper network to **100Mb/s** terminal devices on a 100Base-TX fast Ethernet copper network and/or to **100Mb/s** terminal devices on a 100Base-FX fast Ethernet fiber network.

Congestion Reduction

The SBFTF10xx-12x media converter does not forward collision signals or error packets from one collision domain to another, improving baseline network performance. In addition, the media converter filters packets destined for local devices, also reducing network congestion.

Auto-Negotiation

The Auto-Negotiation feature allows the SBFTF10xx-12x media converter to automatically configure itself to achieve the best possible mode of operation over a link. The media converter broadcasts its speed (10 Mb/s or 100 Mb/s) and duplex capabilities (full or half) to the other devices and negotiates the best mode of operation. Auto-Negotiation allows quick and easy installation because the optimal link is established automatically.

A scenario where the media converter is linked to a non-negotiating device is a case where the user may want to **disable** Auto-Negotiation. In this instance, the mode of operation will drop to the least common denominator between the two devices (e.g.: 10 Mb/s, half-duplex). Disabling this feature gives the user the ability to force the connection to the desired speed and duplex mode of operation.

AutoCross™

When the AutoCross feature is activated, it allows either straight-through (MDI) or crossover (MDI-X) copper cables to be used when connecting to 10Base-T or 100Base-TX devices. AutoCross determines the characteristics of the connection and automatically configures the unit to link up, regardless if the copper cable is MDI or MDI-X configuration. (Transition networks recommends leaving the device in the default “enable” mode.)

Cable Specifications

The physical characteristics must meet or exceed IEEE 802.3™ specifications.

Fiber Cable

Bit Error Rate:	<10 ⁻⁹	
single mode fiber (recommended):	9 μm	
Multimode fiber (recommended):	62.5/125 μm	
Multimode fiber (optional):	100/140, 85/140, 50/125 μm	
SBFTF1011-120	1300 nm multimode	
SBFTF1013-120	1300 nm multimode	
Fiber Optic Transmitter Power:	min: -19.0 dBm	max: -14.0 dBm
Fiber Optic Receiver Sensitivity:	min: -30.0 dBm	max: -14.0 dBm
Link Budget:	11.0 dB	
SBFTF1014-120	1310 nm single mode	
Fiber-optic Transmitter Power:	min: -15.0 dBm	max: -8.0 dBm
Fiber-optic Receiver Sensitivity:	min: -31.0 dBm	max: -8.0 dBm
Link Budget:	16.0 dB	
SBFTF1015-120 (<i>long haul</i>)	1310 nm single mode	
Fiber-optic Transmitter Power:	min: -8.0 dBm	max: -2.0 dBm
Fiber-optic Receiver Sensitivity:	min: -34.0 dBm	max: -7.0 dBm
Link Budget:	26.0 dB	
SBFTF1016-120 (<i>extra long haul</i>)	1310 nm single mode	
Fiber-optic Transmitter Power:	min: -5.0 dBm	max: 0.0 dBm
Fiber-optic Receiver Sensitivity:	min: -34.0 dBm	max: -7.0 dBm
Link Budget:	29.0 dB	
SBFTF1017-120 (<i>long wave length</i>)	1550 nm single mode	
Fiber-optic Transmitter Power:	min: -5.0 dBm	max: 0.0 dBm
Fiber-optic Receiver Sensitivity:	min: -34.0 dBm	max: -7.0 dBm
Link Budget:	29.0 dB	
SBFTF1018-120	1300 nm multimode	
Fiber-optic Transmitter Power:	min: -19.0 dBm	max: -14.0 dBm
Fiber-optic Receiver Sensitivity:	min: -33.5 dBm	max: -14.0 dBm
Link Budget:	14.5 dB	
SBFTF1025-120	1310 nm single mode	
Fiber-optic Transmitter Power:	min: -11.0 dBm	max: -3.0 dBm
Fiber-optic Receiver Sensitivity:	min: -20.0 dBm	max: -3.0 dBm
Link Budget:	9.0 dB	
SBFTF1029-120	1310 nm (TX) / 1550 nm (RX) simplex	
SBFTF1029-121	1550 nm (TX) / 1310 nm (RX) simplex	
Fiber-optic Transmitter Power:	min: -13.0 dBm	max: -6.0 dBm
Fiber-optic Receiver Sensitivity:	min: -32.0 dBm	max: -3.0 dBm
Link Budget:	19.0 dB	
SBFTF1029-122	1310 nm (TX) / 1550 nm (RX) simplex	
SBFTF1029-123	1550 nm (TX) / 1310 nm (RX) simplex	
Fiber-optic Transmitter Power:	min: -8.0 dBm	max: -3.0 dBm
Fiber-optic Receiver Sensitivity:	min: -33.0 dBm	max: -3.0 dBm
Link Budget:	25.0 dB	

The fiber optic transmitters on this device meets Class I Laser safety requirements per IEC-825/CDRH standards and complies with 21 CFR1040.10 and 21CFR1040.11.

Cable Specifications -- Continued

Copper Cable

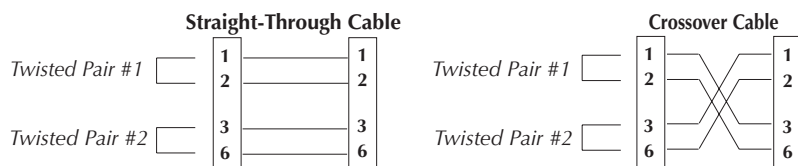
Category 3: (Minimum requirement for 10 Mb/s operation)

Gauge	24 to 22 AWG
Attenuation	11.5 dB/100m @ 5-10 MHz
Maximum Cable Distance	100 meters

Category 5: (Minimum requirement for 100 Mb/s operation)

Gauge	24 to 22 AWG
Attenuation	22.0 dB /100m @ 100 MHz
Maximum Cable Distance	100 meters

- Straight-through (MDI) or crossover (MDI-X) twisted-pair cable may be used.
- Shielded (STP) or unshielded (UTP) twisted-pair cable may be used.
- Pins 1&2 and 3&6 are the two active pairs in an Ethernet network .
- Use only dedicated wire pairs for the active pins:
(e.g., blue/white & white/blue, orange/white & white/orange, etc.)
- Do not use flat or silver satin wire.



Optional Accessories (sold separately)

Part Number	Description
SPS-1872-SA	Optional External Power Supply; 18-72VDC Stand-Alone Output: 12.6VDC, 1.0 A
SPS-1872-DPS	Optional External Power Supply; 18-72VDC Piggy-back; Output: 12.6VDC, 1.0 A
WMBL	Optional Wall Mount Brackets; Length: 4.7in. (119mm)
WMBV	Optional Vertical Mount Bracket; Length: 5.0in. (127mm)
WMBD	Optional DIN Rail Mount Bracket; Length: 5.0in. (127mm)
WMBD-F	Optional DIN Rail Mount Bracket (flat); Length: 3.3in. (84mm)

Technical Specifications

For use with Transition Networks Model SBFTF10xx-12x or equivalent.

Standards	IEEE 802.3™
Data Rate	10 Mb/s, 100 Mb/s
Dimensions	3.25" x 1.75" x 4.8" (82 x 43 x 122 mm)
Weight	13 oz. (369 g) (approximate)
Power Consumption	4.95 watts
Power Supply	12VDC, 0.8 A (N. America, Europe, Japan, UK) 12VDC, 1.25 A (Latin Am., Australia, N.Z., S. Africa) The external power supply provided with this product is UL listed by the power supply's manufacturer.
MTBF	48,000 hours (MIL217F2 V5.0) (MIL-HDBD-217F) 129,000 hours (Bellcore7 V5.0)
Packet Size:	Unicast MAC addresses: 4K Memory: 256K bytes (2 Mbit) Maximum packet size: 1536 bytes
Environment	Tmra*: 0 to 50°C (32 to 122°F) Storage Temp: -20 to 85°C (-4 to 185°F) Humidity: 5 to 95%, non condensing Altitude: 0 to 10,000 feet
Warranty	Lifetime

*Manufacturer's rated ambient temperature.

The information in this user's guide is subject to change. For the most up-to-date information, view the user's guide on-line at: www.transition.com.

Product is certified by the manufacturer to comply with DHHS Rule 21/CFR, Subchapter J applicable at the date of manufacture.

CAUTION: Visible and invisible laser radiation when open. Do not stare into the beam or view directly with optical instruments.

CAUTION: Use of controls, adjustments or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

Troubleshooting

If the media converter fails, isolate and correct the failure by determining the answers to the following questions and then taking the indicated action:

1. **Is the power LED on the media converter illuminated?**
NO
 - Is the power adapter the proper type of voltage and cycle frequency for the AC outlet? (See “Power Supply” on page 13.)
 - Is the power adapter properly installed in the media converter and in the outlet?
 - Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.**YES**
 - Proceed to step 2.
2. **Is the “Duplex/Link” LED illuminated on a port with twisted-pair cable installed?**
NO
 - Check the copper cables for proper connection.
 - Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.**YES**
 - Amber = The media converter has selected half-duplex mode.
 - Green = The media converter has selected full-duplex mode.
 - If the mode is not correct, disconnect and reconnect the twisted pair cable to restart the initialization process.
 - Proceed to step 3.
3. **Is the “LACT” LED illuminated on the fiber cable port?**
NO
 - Check the fiber cables for proper connection.
 - Verify that the TX and RX cables are connected to the RX and TX ports, respectively, on the 100Base-FX device.
 - Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.**YES**
 - Proceed to step 4.
4. **Is the “Speed” LED illuminated on a port with twisted-pair cable installed?**
NO
 - Check the copper cables for proper connection.
 - Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.**YES**
 - Amber = The media converter has selected 10Mb/s operation.
 - Green = The media converter has selected 100Mb/s operation.
 - If the speed is not correct, disconnect and reconnect the twisted pair cable to restart the initialization process.
 - Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.

Compliance Information

**CISPR22/EN55022 Class A + EN55024
CE Mark**

FCC Regulations

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

Canadian Regulations

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications. Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European Regulations

Warning This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Achtung! Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten. In diesem Fall ist der Benutzer für Gegenmaßnahmen verantwortlich.

Attention! Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.

VCCI Class 1 Compliance

This equipment is in the 1st Class category (information equipment to be used in commercial and/or industrial areas) and conforms to the standards set by the Voluntary Control Council For Interference by Data Processing Equipment and Electronic Office Machines aimed at preventing radio interference in commercial and/or industrial areas. When used in a residential area or in an adjacent area thereto, interference may be caused to radio and TV receivers, etc. Read the instructions for correct handling.

この装置は、第一種情報装置（商工業地域において使用されるべき情報装置）で商工業地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

従って、住宅地域またはその隣接した地域で使用すると、ラジオ、テレビジョン受信機等に受信障害を与えることがあります。

取扱説明書に従って正しい取り扱いをして下さい。



CAUTION: RJ connectors are NOT INTENDED FOR CONNECTION TO THE PUBLIC TELEPHONE NETWORK. Failure to observe this caution could result in damage to the public telephone network.

Der Anschluss dieses Gerätes an ein öffentliches Telekommunikationsnetz in den EG-Mitgliedstaaten verstößt gegen die jeweiligen einzelstaatlichen Gesetze zur Anwendung der Richtlinie 91/263/EWG zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich der gegenseitigen Anerkennung ihrer Konformität.

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		Declaration of Conformity	
Name of Mfg:	Transition Networks	6475 City West Parkway, Minneapolis MN 55344 USA	
Model:	SBFTF10xx-12x Series Media Converters		
Part Number(s):	SBFTF1011-120, SBFTF1013-120, SBFTF1014-120, SBFTF1015-120, SBFTF1016-120, SBFTF1017-120, SBFTF1018-120, SBFTF1025-120, SBFTF1029-120, SBFTF1029-121, SBFTF1029-122, SBFTF1029-123		
Regulation:	EMC Directive 89/336/EEC		
Purpose: To declare that the SBFTF10xx-12x to which this declaration refers is in conformity with the following standards.			
CISPR 22:1993; EN 55022:1994; EN 55024:1998; FCC Part 15 Subpart B; 21 CFR subpart J; EN 61000-3-2:1995; EN61000-3-3:1995			
<i>I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).</i>			
		April 16, 2001	
Stephen Anderson, Vice-President of Engineering		Date	

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